

REMARKS

The Office Action dated May 21, 2008 has been given careful consideration by the applicants. Reconsideration of the application is hereby respectfully requested. Claims 1-39 remain in the application.

The Office Action

The Examiner rejected claims 1, 8-9, 21-22, 26-30, 32-34 and 36-38 under 35 U.S.C. § 103(a) as being unpatentable over U.S. patent No. 6,346,704 to Kenway in view of U.S. Patent No. 4,814,870 to Crall.

The Examiner rejected claims 2-3 and 31 under 35 U.S.C. §103(a) as being unpatentable over Kenway in view of Crall and further in view of U.S. Patent No. 6,353,197 to Ulrichsen.

The Examiner rejected claims 4-7 under 35 U.S.C. §103(a) as being unpatentable over Kenway in view of Crall and further in view of U.S. Patent No. 5,936,353 to Triner.

The Examiner rejected claims 10-12 under 35 U.S.C. §103(a) as being unpatentable over Kenway in view of Crall and further in view of U.S. Publication No. 2004/0003680 to Wasmund.

The Examiner rejected claims 13-17 under 35 U.S.C. §103(a) as being unpatentable over Kenway in view of Crall and further in view of U.S. Patent No. 4,704,660 to Robbins.

The Examiner rejected claims 13 and 18-20 under 35 U.S.C. §103(a) as being unpatentable over Kenway in view of Crall and further in view of U.S. Patent No. 5,814,840 to Woodall.

The Examiner rejected claims 23-25, 35 and 39 under 35 U.S.C. §103(a) as being unpatentable over Kenway in view of Crall and further in view of U.S. Publication No. 2003/0222002 to Meyer.

The Claims are Allowable

The Examiner rejected independent claims 1, 30 and 36 based on Kenway and Crall. In the rejection, the Examiner states that Kenway does not include a

lead-salt based thermal infrared imager supporting snapshot action thermal imaging. We accept the position of the Examiner on this point.

However, the Examiner argues that it would have been obvious to use the lead-salt based scanner described in Crall. We disagree with the Examiner on this point.

In this regard, the specification itself, at pages 1-4, describes the deficiencies of known imaging techniques, including infrared imaging techniques that are described in Kenway. Kenway states that the typical IR scanner it would use are cooled systems or microbolometers (col. 1, lines 51-54). These are precisely the type of imagers that the present application identifies as insufficient. So, it is submitted that Kenway teaches away from the use of a lead-salt imager as contemplated by the present application.

Further, for some types of infrared imaging, the disadvantages are cost and lack of ruggedness. For other types of infrared imagers, the disadvantages are lack of functionality and responsiveness on a pixel basis. These problems were not easily solved in the field until the applicants' invention. And, the cited portions of Crall – which relate to a portable infrared imager - do not suggest the use of the imager in an automated process control inspection environment as contemplated by the present application.

Therefore, Kenway and Crall are not combinable as suggested by the Examiner.

According to the applicants' invention, the use of a lead salt-based imager solves the above problems with the prior techniques. The lead salt based imagers can be implemented without the cost of prior systems that required complex cooling systems and have adequate responsiveness on a pixel level to allow for snapshot mode of operation in a machine vision environment. This feature, a lead salt based thermal infrared imager supporting snap shot mode of operation in an automated process control inspection environment, is clearly recited in claim 1. Therefore, this claim, and all claims dependent thereon (claims 2-29), should be allowed.

In addition, the Examiner rejected claims 26 and 29 in view of Kenway. However, the Examiner's rejection should be withdrawn inasmuch as there is no indication in the cited portions of Kenway that any marking occurs as a result of parts being below or above a predetermined quality level or that closed loop control of a manufacturing process is occurring.

Independent claims 30 and 36 also recite a lead salt based imager, so these claims should be allowed for the same reasons as noted above. In addition, claims 30 and 36 recite a feature of simultaneously integrating thermal infrared signals within all pixel sites of the imager. The Examiner has not established that this feature is shown in Kenway and Crall. Therefore, these claims, and all claims dependent thereon, should be allowed.

Also, in the various rejections based on combinations of Kenway, Crall and other patents, the Examiner has not established that any of the other cited patents cure the deficiencies of Kenway and Crall. Therefore, all claims are submitted to be allowable for at least these reasons.

The Examiner rejected claims 2-3 and 31 based on Kenway, Crall and Ulrichsen. The Examiner assert that Ulrichsen shows a belt conveyor for inspecting matter of varying composition. However, the Examiner has not established that it would have been obvious to combine a belt conveyor for such relatively small and random objects with inspection systems of Kenway and Crall which purportedly relate to inspection of large panels and the like. Therefore, it is submitted that the rejection fails.

Claims 4-7 were rejected as being unpatentable over Kenway, Crall and Triner. The Examiner argues that Triner discloses a baffle to shield the imager from deleterious thermal energy. However, the cited portion of Triner relates to a heat sink which allows LEDs to cool. Therefore, the Examiner's rejection fails.

The Examiner rejected claims 10-12 as being unpatentable over Kenway, Crall and Wasmund. However, Wasmund has a filing date of July 3, 2002. The priority date on the present application is May 21, 2001. Therefore, the rejection should be removed.

The Examiner rejected claims 13-17 as being unpatentable over Kenway, Crall and Robbins. However, the Examiner has not established that Robbins is in any way combinable with the combination.

The Examiner rejected claims 13 and 18-20 as being unpatentable over Kenway, Crall and Woodall. However, the Examiner has not established in any way how or why

the teachings of Woodall would be combined with the combination. Therefore, the rejection should be removed.

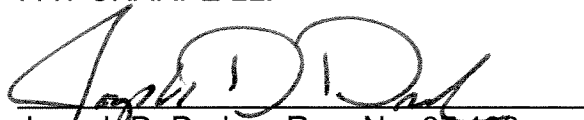
The Examiner rejected claims 23-25, 35 and 39 as being unpatentable over Kenway, Crall and Meyer. The Examiner's rejection fails, however. For example, claims 35 and 39 recite the step of altering parameters of manufacturing process. This is not fairly taught by the suggested combination. Therefore, the rejection should be removed.

CONCLUSION

For the reasons detailed above, it is respectfully submitted all claims in the application (Claims 1-39) are now in condition for allowance.

Respectfully submitted,

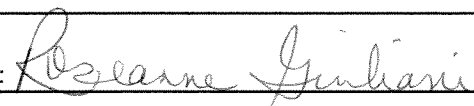
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Date

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